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REMARKS

STATUS SUMMARY

Claims 1-24 are pending in the present application. The Examiner has objected to claim 2 for certain informalities and rejected claims 14-17 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter that the applicant regards as the invention. The Examiner has also rejected claims 1, 9-11, 19-21, 23, and 24 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. US2004/0161031 A1 of *Kwentus et al.* ("*Kwentus*"). The Examiner has also rejected claims 2, 3, 12, 13, 15-18, and 22 under 35 U.S.C. § 103(a) as being unpatentable over *Kwentus* in view of U.S. Patent Application Publication No. US2004/0142667 A1 of *Lochhead et al.* ("*Lochhead*"), claims 4-6 and 14 as being unpatentable over *Kwentus* in view of *Lochhead* and further in view of U.S. Patent No. 6,363,033 to *Cole et al.* ("*Cole*"), and claims 7 and 8 as being unpatentable over *Kwentus* in view of *Lochhead* and further in view of *Cole* and further in view of U.S. Patent No. 5,764,113 to *Snell* ("*Snell*").

These formal matters identified in the Office Action are addressed herein below.

RESPONSE TO OBJECTION TO CLAIM 2

The Examiner has objected to claim 2 because of certain informalities and has required appropriate correction. The first clause of claim 2 has been amended to refer to the upsampler receiving a new modulated digital stream of data from the modulator, rather than the first digital signal. Support for this amendment may be found, for example, at page 12, paragraph [030], lines 1-7, page 15, paragraph [034], lines 18-21, and elsewhere throughout the specification, as well as at FIG. 5 and FIG. 7, step 716, of the drawings.

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The third clause of claim 2 was also amended to refer to a combiner, rather than a digital-to-analog converter ("DAC"), in signal communication with the complex mixer. Support for this amendment may be found, for example, at FIG. 5 of the drawings, and page 12, paragraph [030], lines 11-13, of the specification and elsewhere throughout the specification.

None of these amendments to the claims referred to in this section have been made in response to a substantive rejection or for any other purpose relating to patentability. The amendments made to the claims are believed to be fully supported by the present application as originally filed. Accordingly, no new matter has been added by these amendments.

In view of the foregoing, applicants respectfully submit that the objection to claim 2 has now been overcome, and therefore request that the Examiner's objection to this claim be withdrawn at this time.

CLAIM REJECTIONS - 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 14-17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. Accordingly, applicants have amended claims 14-17 as follows to overcome the indefiniteness referred to by the Examiner.

In general, each of claims 14-17 were amended to refer back to a different, *i.e.*, a later, base claim, thereby referring to a base claim that provided sufficient antecedent basis for the limitations found in each of these claims. In addition, claim 14 was further amended to refer to "a" DAC "in signal communication with the converting means" because there was no antecedent basis for the DAC in the claim as originally written. Support for these amendments may be

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found, for example, at page 12, paragraph [029], lines 9-12, page 12, paragraph [030], and elsewhere throughout the specification, as well as FIG. 5 of the drawings.

In view of the foregoing, applicants respectfully submit that the rejections of claims 14, 15, 16, and 17 under 35 U.S.C. § 112, second paragraph, have been overcome, and request that these rejections be withdrawn.

RESPONSE TO CLAIM REJECTIONS UNDER 35 U.S.C. § 102(e)

Claims 1, 9, and 10 (apparatus), 11, 19, and 20 (means), and 21, 23, and 24 (method) are rejected under 35 U.S.C. § 102(e) as being anticipated by *Kwentus*. Applicants have amended claims 1 and 11 to clarify the invention recited in these respective claims. Support for these amendments of claims 1 and 11 may be found, for example, at pages 8-9, paragraph [024], lines 7-16, page 12, paragraph [030], lines 1-13, and elsewhere throughout the specification. No new matter has been added by these Amendments.

Applicants respectfully traverse this rejection because *Kwentus* fails to teach each and every feature or element recited in the rejected claims, as amended.

CLAIM 1

Independent claim 1, as amended, discloses:

A transcoder for converting a received first digital signal with a first modulation and encoding scheme to a second digital signal with a second modulation and encoding scheme, the transcoder comprising:

a demodulator that produces a demodulated digital stream of data from the received first digital signal;

a modulator in signal communication with the demodulator, where the modulator modulates the demodulated digital stream of data with the second modulation and encoding scheme and produces a new modulated digital stream of data; and

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an upconverter in signal communication with the modulator, where the upconverter produces the second digital signal from the new modulated digital stream of data.

With regard to claim 1, the Examiner states the following:

... Furthermore, the transport processor (implemented optionally) formats the data into a MPEG format, therefore in order to obtain the data the receiver has to perform demodulation and decoding}; a modulator in signal communication with the demodulator, where the modulator modulates the digital stream of data with the second modulation and encoding scheme (Fig. 8, elements "modulator", "2<sup>nd</sup> signal type" & Fig. 6A-B & Fig. 9, element "modulator" & Fig. 12, element "step 6" & Paragraph 12, line 8 & Paragraph 15, lines 14-17 & Paragraph 77, lines 6-13) {Interpretation: The reference discloses a modulator which modulates the data into a QPSK modulation and specified encoding}; an upconverter in signal communication with the modulator, where the upconverter produces the second digital signal (Fig. 8, elements "ADC", "oscillator", "mixer", "frequency 3" & Paragraph 15, lines 19-30 & Paragraph 78, lines 9-17 & Paragraph 85) {Interpretation: The reference discloses an upconverter which upconverts the digital baseband signal of second modulation and encoding into L-band range so as to be compatible to a legacy set top box (STB)}. ... (pages 4-5, Office action.)

First, in general, the invention is related to a "transcoder 202 [that] may act as a fully digital converter that converts the received MPEG 2 transport stream on the received 8-PSK Turbo Coded signal to a MPEG 2 transport stream on a QPSK signal 221 that can be received and decoded by a traditional QPSK DBS set-top box 206." (See *specification*, page 8, paragraph [0023], lines 1-4). In claim 1, the upconverter produces the second digital signal from the new modulated digital stream of data.

The Examiner has stated that this is taught by *Kwentus*, specifically, paragraphs [0015], [0078], and [0085] as noted above. Applicants respectfully disagree for the following reasons. First, in general, claim 1 teaches demodulating a first digital signal to produce a new modulated digital stream having a second modulation and encoding scheme, and upconverting the new modulated digital stream to produce a second digital signal.

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In contrast, in paragraph [0015], page 2, of *Kwentus*, the received satellite signal is down-converted to an analog baseband signal having I and Q components (lines 1-7). This analog baseband signal is input into a transcoder that transforms this signal thereby generating the second signal having the second signal type (lines 14-19). In the second functional block, a DAC operates to transform the second signal from a digital signal into an analog signal that is an IF signal within the RF spectrum (lines 19-24). The described embodiment also includes an “upconverter functional block” operable to up-convert the IF signal to an L-band signal (lines 26-30).

As for paragraph [0078], page 2, (lines 9-17), of *Kwentus*, here a signal having the 2<sup>nd</sup> signal type is provided to a DAC that produces an analog version of the signal having the 2<sup>nd</sup> signal type, which is then upconverted in frequency before being provided as an output signal (lines 9-12).

Paragraph [0085], page 8, of *Kwentus*, is similar in that a signal provided by a satellite receiver is transformed by a modulator to a signal having a DIRECTV and/or a DVB STB compatible signal (paragraph [0084], lines 1-5), which is converted to an analog signal having an IF frequency by a DAC. The IF signal is then converted to an L-band signal by an up-converter functional block (paragraph [0085], lines 1-9).

In contrast, the claimed invention teaches a modulator that modulates a digital stream of data with a second a second modulation and encoding scheme, such as, for example, QPSK, and an upconverter in signal communication with the modulator then converts the digital stream of data to a higher frequency (*see specification*, page 7, [022], lines 8-11).

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Independent claim 11, as amended, is a claim related to a transcoder that includes "means for modulating the demodulated digital stream of data with the second modulation and encoding scheme to produce a new modulated stream of data; and means for upconverting the new modulated digital stream of data to produce the second digital signal." Independent method claim 21 includes the steps of "modulating the demodulated first digital signal with the second modulation and encoding scheme, wherein the modulating produces a new modulated digital signal; and upconverting the new modulated digital signal to produce the second digital signal."

Thus these remaining independent claims 11 and 21 each include similar limitations as found in claim 1 and these claims are therefore also patentably distinct from *Kwentus* for at least the same reasons. In general, those limitations are a modulator that modulates a digital stream of data with a second a second modulation and encoding scheme, and an upconverter in signal communication with the modulator that then converts the digital stream of data to a higher frequency, and those limitations are not taught by *Kwentus*. *Kwentus* therefore fails to teach each and every feature or element recited in each of independent claims 1, 11, and 21.

Accordingly, applicant believes that independent claims 1, 11, and 21 are in condition for allowance and because all other claims are dependent directly or indirectly from allowable claims 1, 11, and 21, applicants respectfully request that the Examiner withdraw the rejection of claims 1-24 under 35 U.S.C. § 102(e).

CLAIM AMENDMENTS

In addition to the amendments to claims 1, 2, 11, and 14-17 described above, additional amendments were made to claims 4, 12, 14-17, and 22-24 to improve grammar, correct

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typographical errors, etc. No new matter has been added by these Amendments. Additionally, applicants reserve the right to present the amended claims in their original form in one or more continuation applications.

AMENDMENTS TO SPECIFICATION

Several paragraphs of the specification, specifically, paragraphs [005], [010], [017], [018], and [029], have been amended in minor aspects to improve clarity, correct typographical errors, etc.

Support for these amendments is found throughout the specification as originally filed, and accordingly no new matter is believed to have been added. No new matter has been added by these Amendments.

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**CONCLUSION**

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

Respectfully submitted,  
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